

MAY 12 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re application of: Xiong Zhang et al.

Attorney Docket: 61472-0269224

Serial No.: 09/700,236

Art Unit: 1765

Filed: May 9, 2001

Examiner: Song, Matthew J.

For: CRYSTAL GROWTH METHOD FOR GROUP-III NITRIDE AND
RELATED COMPOUND SEMICONDUCTORS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT TRANSMITTAL

1. Transmitted herewith is an amendment for this application. Please acknowledge receipt of these materials by stamping the date on the enclosed, self-addressed card.

STATUS

2. Applicant is a small entity.

EXTENSION OF TIME

3. (a) ☒ Applicant petitions for an extension of time under 37 CFR 1.136 for the total number of months checked below:

	Extension (months)	Fee for other than small entity	Fee for small entity
<input type="checkbox"/>	one month	\$ 110.00	\$ 55.00
<input type="checkbox"/>	two months	\$ 420.00	\$ 210.00
<input checked="" type="checkbox"/>	three months	\$ 950.00	\$ 475.00
<input type="checkbox"/>	four months	\$1,480.00	\$ 740.00
<input type="checkbox"/>	five months	\$2,010.00	\$ 1,005.00

Fee \$475.00

If an additional extension of time is required please consider this a petition therefor.

- ☐ An extension for months has already been secured and the fee paid therefor of \$ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request \$475.00

CERTIFICATE OF MAILING

I, Diana Dearing, hereby certify that this paper (along with any items referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: May 6, 2004

Diana Dearing



FEE FOR CLAIMS

4. The fee for claims (37 CFR 1.16(b)-(d)) has been calculated as shown below:

(Col. 1)		(Col. 2)	(Col. 3)	SMALL ENTITY			OTHER THAN A SMALL ENTITY	
CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADD'L FEE	OR	RATE	ADD'L FEE
TOTAL	MINUS	=		x 9 =	\$			x18 = \$
INDEP.	MINUS	=		x 40 =	\$			x80 = \$
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEP. CLAIM + 135 =			\$	+270	\$			
				TOTAL ADD'L FEE \$		OR	TOTAL ADD'L FEE \$	

- (a) ☒ No additional fee for claims required.
(b) ☐ Total additional fee for claims required \$

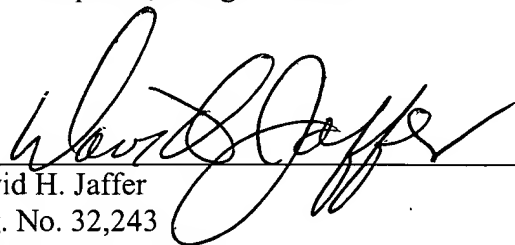
FEE PAYMENT

5. ☒ Attached is a check in the sum of \$475.00.
☐ Charge Account No. 502213 the sum of \$
A duplicate of this transmittal is attached.

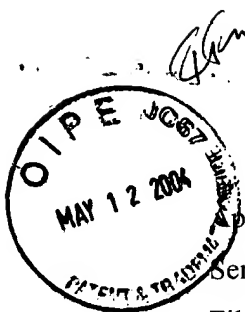
FEE DEFICIENCY

6. ☒ If any additional extension and/or fee is required, charge Account No. 502213.

Date: May 6, 2004


David H. Jaffer
Reg. No. 32,243
Customer No. 27498

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AMENDMENT

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This paper is submitted in response to the Office Action mailed November 6, 2003.

In The Claims

Please amend the claims as follows:

- 1 1. (Currently amended) A crystal growth method for the group-III nitride compound
2 semiconductors, comprising:
3 forming a MOCVD-grown periodic or non-periodic ~~inactive~~ amorphous or
4 polycrystalline intermediate multi-layered buffer having at least three layers with each layer
5 having a thickness in the range from 2 nm to 6 nm on a substrate at a first temperature in which
6 the layers alternate between at least two types of compound semiconductors A and B different
7 from each other in lattice constant, energy band gap, layer thickness, and composition; and
8 forming a MOCVD-grown layer of a group-III nitride compound semiconductor
9 on the formed ~~inactive~~ intermediate multi-layered buffer, wherein said layer of a group-III nitride
10 is formed at a temperature higher than said first temperature and said intermediate multi-layered
11 buffer adjoins both said layer of group-III nitride compound and said substrate, whereby said
12 intermediate multi-layered buffer partially recrystallizes at said higher temperature, thereby
13 relieving lattice strain between said layer of group-III nitride compound and said substrate, and
14 facilitating improved crystalline quality of said group-III nitride compound.
- 1 2. (Previously amended) A crystal growth method according to claim 1, further
2 comprising doping a n- or p-type in said group-III nitride compound semiconductor.